Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.   (Withdrawn) A method for controlling an industrial process, the method comprising;

outputting a plurality of parameters from a process for manufacture of a substance;

using each of the plurality of parameters in a computer aided process, the computer aided process comparing at least two of the plurality of parameters against a training set of parameters, the training set of parameters being predetermined;

determining if the at least two of the plurality of parameters are within a predetermined range of the training set of parameters; and

outputting a result based upon the determining step.

2.   (Withdrawn) The method of claim 1 wherein the substance is selected from a petroleum product, a chemical product, a food product, a health product, a cleaning product, a biological product, and other fluid or objects.

3.   (Withdrawn) The method of claim 1 wherein the plurality of parameters are selected from an intrinsic element or an extrinsic element of the process.

4.   (Withdrawn) The method of claim 1 wherein the using, determining, and outputting are provided in a computer software program.

5.   (Withdrawn) The method of claim 1 wherein the computer aided process includes an algorithm selected from PCA, HCA, KNN CV KNN Prd, SIMCA CV, SIMCA Prd, Canon Prd, SCREAM, and Fisher CV.

6.   (Withdrawn) The method of claim 1 further comprising normalizing each of the plurality of parameters before the using step.

7.   (Withdrawn) The method of claim 1 further comprising adjusting a base line of each of the plurality of parameters before the using step.

8.   (Withdrawn) The method of claim 1 wherein the result is an affirmative response or a negative response, where the response is displayed on a terminal.

9.   (Withdrawn) The method of claim 1 wherein the computer aided process is selected from a library comprising a plurality of processes for performing the comparing step.

10.   (Withdrawn) The method of claim 9 wherein the plurality of processes includes at least a comparing process, a contrasting process, and a functional process.

11.   (Withdrawn) A method for monitoring an industrial process for the manufacture of materials, the method comprising:

inputting a plurality of process parameters from a process for manufacture of a substance;

selecting one of a plurality of computer aided processes, each of the computer aided processes being capable of determining an output based upon a training set of the plurality of process parameters;

using each of the plurality of parameters in the selected computer aided process, the selected computer aided process comparing at least two of the plurality of process parameters against a training set of parameters;

determining if the at least two of the plurality of process parameters are within a predetermined range of the training set of parameters; and

outputting a result based upon the determining step.

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12.   (Withdrawn) The method of claim 11 wherein the substance is selected from a petroleum product, a chemical product, a food product, a health product, a cleaning product, a biological product, and other fluid or objects.

13.   (Withdrawn) The method of claim 11 wherein the plurality of process parameters are selected from an intrinsic element or an extrinsic element of the process.

14.   (Withdrawn) The method of claim 11 wherein the using, determining, and outputting are provided in a computer software program.

15.   (Withdrawn) The method of claim 11 wherein the computer aided process includes an algorithm selected from PCA, HCA, KNN CV KNN Prd, SIMCA CV, SIMCA Prd, Canon Prd, SCREAM, and Fisher CV.

16.   (Withdrawn) The method of claim 11 further comprising normalizing each of the plurality of parameters before the using step.

17.   (Withdrawn) The method of claim 11 further comprising adjusting a base line of each of the plurality of parameters before the using step.

18.   (Withdrawn) The method of claim 11 wherein the result is an affirmative response or a negative response, where the response is displayed on a terminal.

19.   (Withdrawn) The method of claim 11 wherein the computer aided process is selected from a library comprising a plurality of processes for performing the comparing step.

20.   (Withdrawn) The method of claim 19 wherein the plurality of processes includes at least a comparing process, a contrasting process, and a functional process.

21. (Withdrawn) A method for identifying a mode of operation in an industrial process, the method comprising:

running an industrial process, the industrial process being characterized by a plurality of parameters at an in-process state of a substance or object being manufactured, each of the parameters defining a characteristic of the substance or the object in the in-process state;

converting each of the parameters into an electronic form;

inputting each of the plurality of parameters through a preprocessing method to increase a signal to noise ratio of one or more of the plurality of parameters, the preprocessing method being preselected based upon a training set of parameters that improved the signal to noise ration of the one or more parameters;

processing the preprocessed parameters through a computer aided process to form a descriptor from the preprocessed parameters, the computer aided process being selected from a plurality of computer aided processes based upon a training set of parameters;

determining if the descriptor is within a selected class from a plurality of classes; and

outputting a result based upon the determining step.

22. (Withdrawn) A method for determining an acceptability of a process, the method comprising:

identifying a plurality of process parameters from a process for manufacture of a substance;

using one of the selected computer aided processes out of a plurality of computer aided processes, the selected computer aided process being derived from a training set of the plurality of process parameters;

determining an acceptability of the process using each of the plurality of parameters in the selected computer aided process, the selected computer aided process comparing at least two of the plurality of process parameters against a training set of parameters; and

outputting a result based upon the acceptability of the process.

23.   (Previously Presented) A method for monitoring an environmental condition, the method comprising:

storing a first model in a memory;

acquiring environmental data from at least one of a chemical sensor, a biological sensor, and a radiation sensor;

applying the first model to the environmental data to identify a first predicted descriptor characteristic of a state of an environment; and

consulting a first knowledge based system to provide an output based upon the first predicted descriptor.

24.   (Original) The method of claim 23 wherein the model is constructed from a mathematical equation describing a physical law.

25.   (Original) The method of claim 23 further comprising preprocessing the data prior to applying the model.

26.   (Canceled)

27.   (Previously Presented) The method of claim 23 wherein the output is communicated to a human operator to permit monitoring of the environment.

28.   (Original) The method of claim 23 wherein the output is resident on a server and accessible to a user through a browser software program.

29.   (Currently Amended) The method of claim 28 wherein the input is acquired from the process over a network of computers.

30.　(Currently Amended)　The method of claim 23 wherein the input is acquired from the process over a network of computers.[.]

31.　(Original)　The method of claim 23 wherein the output is communicated over a network to an associated system, the associated system including at least one of a legacy system, an e-enterprise system, and a desktop application.

32.　(Original)　The method of claim 23 wherein the first knowledge based system is an expert system.

33.　(Currently Amended)　The method of claim 23 further comprising:

acquiring initial data from a source comprising the at least one of the chemical, biological, and a radiation sensor sensors at a first time;

converting the initial data into electronic form;

loading the initial data into memory;

retrieving the initial data from memory;

acquiring subsequent data from the source at a second time;

assigning a first descriptor to the initial data and a second descriptor to the subsequent data;

constructing the model based upon the initial data, the subsequent data, the first descriptor, and the second descriptor; and

storing the model in memory.

34.　(Original)　The method of claim 33 wherein the model is constructed from one of a univariate statistical technique, a multivariate statistical technique, a neural-based approach, and a time series analysis.

35.　(Original) The method of claim 33 wherein the model is constructed from one of a group of different algorithms stored in a library.

36.　(Previously Presented) The method of claim 33 wherein the source is in communication with the environment, the initial data and the subsequent data reflecting a prior state of the environment.

37.　(Previously Presented) The method of claim 33 wherein the source is in communication with a second environment, the initial data and the subsequent data reflecting a state of the second environment.

38.　(Previously Presented) The method of claim 33 further comprising:

constructing a second model;

storing the second model in memory;

applying the second model to the environmental data to identify a second predicted descriptor characteristic of the environmental data; and

consulting the first knowledge based system to produce the output based upon the first predicted descriptor and the second predicted descriptor.

39.　(Original) The method of claim 38 wherein the second model is constructed based upon the initial data, the subsequent data, the first descriptor, and the second descriptor, such that comparison of the first descriptor and the second descriptor represents a cross-validation.

40.　(Currently Amended) The method of claim 38 wherein the second model is constructed from a state of a second similar environment, such that comparison of the first descriptor to the second descriptor represents an external validation.[.]

41.   (Original) The method of claim 38 wherein the knowledge based system is an expert system.

42.   (Original) The method of claim 38 wherein a difference between the first predicted descriptor and the second predicted descriptor is resolved by a second expert system.

43.   (Original) The method claim 23 further comprising receiving key preliminary information and communicating the key preliminary information downstream to the first model, such that the first predicted descriptor reflects the key preliminary information.